up dated seach

The invention provides a method of screening a substance for the ability AB to affect the formation of a retinoid X receptor (RXR) homodimer comprising combining the substance and a solution containing RXR receptors and determining the presence of homodimer formation. The screening method can be used to determine compds. which selectively activate homodimer formation and heterodimer formation. Also provided is a method of screening a substance for an effect on a RXR receptor homodimer's ability to bind DNA comprising combining the substance with the homodimer and determining the effect of the compound on the homodimer's ability to bind DNA. Finally, the invention provides methods of activating RXR receptor homodimer formation. Bridged bicyclic aromatic compds. are provided. These compds. are useful for modulating gene expression of retinoic acid receptors, vitamin D receptors and thyroid receptors. Pharmaceutical compns. and methods for modulating gene expression are provided as well. Retinoids were identified that specifically induce RXR homodimer formation and activate RXR homodimers on specific genetic response elements but not RAR/RXR heterodimers. These retinoids allow the specific activation of RXR-selective response pathways, while not inducing RAR-dependent response pathways. One of these compds., SR11237 (I), was prepared from Me 4-[(5,6,7,8-tetrahydro-5,5,8,8,-tetramethyl-2-naphthalenyl)carbonyl]benzoate (preparation given).

AN 1994:526151 CAPLUS

DN 121:126151

ΤI RXR receptor homodimer formation and bridged bicyclic aromatic compounds and their use in modulating gene expression and screening modulating compounds

IN Pfahl, Magnus; Zhang, Xiao Kun; Lehmann, Jurgen M.; Dawson, Marcia I.; Camerion, James F.; Hobbs, Peter D.; Jong, Ling

PΔ La Jolla Cancer Research Foundation, USA; SRI International

SO PCT Int. Appl., 102 pp.

CODEN: PIXXD2

DT Patent

LA English

FAN.CNT 3

r MIN .	CMI 2							
	PATENT NO.		APPLICATION NO.	DATE				
PΙ	WO 9412880	A2 19940609	WO 1993-US11492	19931124 <				
	WO 9412880	A3 19940929						
	W: AT, AU, BB,	BG, BR, BY, CA,	CH, CZ, DE, DK, ES, FI,	GB, HU, JP,				
			MW, NL, NO, NZ, PL, PT,					
	SE, SK, UA,			,,				
			GB, GR, 'IE, IT, LU, MC,	NL. PT. SE.				
			GN, ML, MR, NE, SN, TD,					
	US 5466861		US 1992-982305					
			US 1992-982174					
	CA 2149882	AA 19940609	CA 1993-2149882	19931124 <				
	AU 9458693	A1 19940622	AU 1994-58693	19931124 <				
	AU 700706	B2 19990114						
	EP 671005	A1 19950913	EP 1994-904805	19931124				
	R: AT, BE, CH,	DE, DK, ES, FR,	GB, GR, IE, IT, LI, LU,	MC, NL				
	JP 08506323	T2 19960809	JP 1994-513405	19931124				
	BR 9307528	A 19990831	BR 1993-7528	19931124				
	US 5837725	A 19981117	US 1995-448991	19950524				
PRAI	US 1992-982174	A 19921125		>				
	US 1992-982305	A 19921125						
	US 1992-901719							
	WO 1993-US11492	· · · · · · · · · · · · · · · · · · ·						
00								
US	CASREACT 121:126151	; MARPAT 121:1261	151					

IT 153559-48-9P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(preparation and reaction of, in preparation of compound affecting retinoid

X receptor homodimer formation)

RN 153559-48-9 CAPLUS

CN Benzoic acid, 4-[1-(5,6,7,8-tetrahydro-3,5,5,8,8-pentamethyl-2-naphthalenyl)ethenyl]-, methyl ester (9CI) (CA INDEX NAME)

IT 153559-49-0P

RL: PREP (Preparation)

(preparation of, retinoid X receptor homodimer formation and binding to genetic response element in relation to)

RN 153559-49-0 CAPLUS

CN Benzoic acid, 4-[1-(5,6,7,8-tetrahydro-3,5,5,8,8-pentamethyl-2-naphthalenyl)ethenyl]- (9CI) (CA INDEX NAME)

Me Me 
$$CH_2$$
 $C$ 
 $CO_2H$ 

#### Connecting via Winsock to STN

```
Welcome to STN International! Enter x:x
```

LOGINID:SSSPTA1612RXD

PASSWORD:

TERMINAL (ENTER 1, 2, 3, OR ?):2

```
Welcome to STN International
NEWS 1
                 Web Page URLs for STN Seminar Schedule - N. America
NEWS
                 "Ask CAS" for self-help around the clock
NEWS
        FEB 28
                 PATDPAFULL - New display fields provide for legal status
                 data from INPADOC
NEWS 4
        FEB 28
                BABS - Current-awareness alerts (SDIs) available
NEWS 5 MAR 02 GBFULL: New full-text patent database on STN
NEWS 6 MAR 03 REGISTRY/ZREGISTRY - Sequence annotations enhanced
NEWS 7 MAR 03 MEDLINE file segment of TOXCENTER reloaded
NEWS 8 MAR 22 KOREAPAT now updated monthly; patent information enhanced
NEWS 9 MAR 22
                Original IDE display format returns to REGISTRY/ZREGISTRY
NEWS 10 MAR 22 PATDPASPC - New patent database available
NEWS 11 MAR 22 REGISTRY/ZREGISTRY enhanced with experimental property tags
NEWS 12 APR 04
                EPFULL enhanced with additional patent information and new
                 fields
NEWS
     13 APR 04
                EMBASE - Database reloaded and enhanced
                New CAS Information Use Policies available online
     14 APR 18
NEWS
NEWS 15 APR 25
                Patent searching, including current-awareness alerts (SDIs),
                 based on application date in CA/CAplus and USPATFULL/USPAT2
                 may be affected by a change in filing date for U.S.
                 applications.
NEWS
      16 APR 28
                 Improved searching of U.S. Patent Classifications for
                 U.S. patent records in CA/CAplus
NEWS
      17 MAY 23
                GBFULL enhanced with patent drawing images
NEWS
      18 MAY 23
                REGISTRY has been enhanced with source information from
                 CHEMCATS
     19 JUN 06
NEWS
                The Analysis Edition of STN Express with Discover!
                 (Version 8.0 for Windows) now available
NEWS 20 JUN 13
                RUSSIAPAT: New full-text patent database on STN
NEWS 21 JUN 13
                FRFULL enhanced with patent drawing images
NEWS 22 JUN 27
                MARPAT displays enhanced with expanded G-group definitions
                 and text labels
     23 JUL 01
                MEDICONF removed from STN
NEWS
      24 JUL 07
NEWS
                STN Patent Forums to be held in July 2005
     25 JUL 13
NEWS
                SCISEARCH reloaded
NEWS 26 JUL 20
                Powerful new interactive analysis and visualization software,
                 STN AnaVist, now available
     27 AUG 11
NEWS
                Derwent World Patents Index(R) web-based training during
                August
     28 AUG 11
NEWS
                STN AnaVist workshops to be held in North America
NEWS
     29 AUG 30
                CA/CAplus -Increased access to 19th century research documents
NEWS
    30 AUG 30
                CASREACT - Enhanced with displayable reaction conditions
```

NEWS EXPRESS JUNE 13 CURRENT WINDOWS VERSION IS V8.0, CURRENT MACINTOSH VERSION IS V6.0c(ENG) AND V6.0Jc(JP),

### AND CURRENT DISCOVER FILE IS DATED 13 JUNE 2005

NEWS HOURS STN Operating Hours Plus Help Desk Availability
NEWS INTER General Internet Information
NEWS LOGIN Welcome Banner and News Items
NEWS PHONE Direct Dial and Telecommunication Network Access to STN
NEWS WWW CAS World Wide Web Site (general information)

Enter NEWS followed by the item number or name to see news on that specific topic.

All use of STN is subject to the provisions of the STN Customer agreement. Please note that this agreement limits use to scientific research. Use for software development or design or implementation of commercial gateways or other similar uses is prohibited and may result in loss of user privileges and other penalties.

FILE 'HOME' ENTERED AT 11:51:32 ON 08 SEP 2005

=> file registry
COST IN U.S. DOLLARS

SINCE FILE TOTAL ENTRY SESSION 0.21 0.21

FULL ESTIMATED COST

FILE 'REGISTRY' ENTERED AT 11:51:40 ON 08 SEP 2005 USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT. PLEASE SEE "HELP USAGETERMS" FOR DETAILS. COPYRIGHT (C) 2005 American Chemical Society (ACS)

Property values tagged with IC are from the ZIC/VINITI data file provided by InfoChem.

STRUCTURE FILE UPDATES: 7 SEP 2005 HIGHEST RN 862646-13-7 DICTIONARY FILE UPDATES: 7 SEP 2005 HIGHEST RN 862646-13-7

New CAS Information Use Policies, enter HELP USAGETERMS for details.

TSCA INFORMATION NOW CURRENT THROUGH JULY 14, 2005

Please note that search-term pricing does apply when conducting SmartSELECT searches.

Structure search iteration limits have been increased. See HELP SLIMITS for details.

Experimental and calculated property data are now available. For more information enter HELP PROP at an arrow prompt in the file or refer to the file summary sheet on the web at: http://www.cas.org/ONLINE/DBSS/registryss.html

=> Uploading C:\Program Files\Stnexp\Queries\Paul08141496.str

13

chain nodes : 11 12 13 14 15 16 23 24 25 26 ring nodes : 1 2 3 4 5 6 7 8 9 10 17 18 19 20 21 22 chain bonds : 1-13 1-14 4-11 4-12 8-16 9-15 16-17 16-23 20-24 24-25 24-26 ring bonds : 1-2 1-6 2-3 3-4 4-5 5-6 5-7 6-10 7-8 8-9 9-10 17-18 17-22 18-19 19-20 20-21 21-22 exact/norm bonds : 24-25 24-26 exact bonds : 1-2 1-6 1-13 1-14 2-3 3-4 4-5 4-11 4-12 8-16 9-15 16-17 16-23 20-24 normalized bonds : 5-6 5-7 6-10 7-8 8-9 9-10 17-18 17-22 18-19 19-20 20-21 21-22 isolated ring systems : containing 1 : 17 :

### Match level :

1:Atom 2:Atom 3:Atom 4:Atom 5:Atom 6:Atom 7:Atom 8:Atom 9:Atom 10:Atom 11:CLASS 12:CLASS 13:CLASS 14:CLASS 15:CLASS 16:CLASS 17:Atom 18:Atom 19:Atom 20:Atom 21:Atom 22:Atom 23:CLASS 24:CLASS 25:CLASS 26:CLASS

## L1 STRUCTURE UPLOADED

=> d l1 L1 HAS NO ANSWERS L1 STR

Structure attributes must be viewed using STN Express query preparation.

=> s l1

SAMPLE SEARCH INITIATED 11:51:57 FILE 'REGISTRY'
SAMPLE SCREEN SEARCH COMPLETED - 11 TO ITERATE

100.0% PROCESSED 11 ITERATIONS 3 ANSWERS

SEARCH TIME: 00.00.01

FULL FILE PROJECTIONS: ONLINE \*\*COMPLETE\*\*

BATCH \*\*COMPLETE\*\*

PROJECTED ITERATIONS: 22 TO 418

PROJECTED ANSWERS: 3 TO 163

L2 3 SEA SSS SAM L1

=> s l1 ful

FULL SEARCH INITIATED 11:52:02 FILE 'REGISTRY'
FULL SCREEN SEARCH COMPLETED - 243 TO ITERATE

100.0% PROCESSED 243 ITERATIONS 28 ANSWERS

SEARCH TIME: 00.00.01

L3 28 SEA SSS FUL L1

=> file caplus

COST IN U.S. DOLLARS SINCE FILE TOTAL

ENTRY SESSION

FULL ESTIMATED COST 161.33 161.54

FILE 'CAPLUS' ENTERED AT 11:52:04 ON 08 SEP 2005
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.
PLEASE SEE "HELP USAGETERMS" FOR DETAILS.
COPYRIGHT (C) 2005 AMERICAN CHEMICAL SOCIETY (ACS)

Copyright of the articles to which records in this database refer is held by the publishers listed in the PUBLISHER (PB) field (available for records published or updated in Chemical Abstracts after December 26, 1996), unless otherwise indicated in the original publications. The CA Lexicon is the copyrighted intellectual property of the

American Chemical Society and is provided to assist you in searching databases on STN. Any dissemination, distribution, copying, or storing of this information, without the prior written consent of CAS, is strictly prohibited.

FILE COVERS 1907 - 8 Sep 2005 VOL 143 ISS 11 FILE LAST UPDATED: 7 Sep 2005 (20050907/ED)

New CAS Information Use Policies, enter HELP USAGETERMS for details.

This file contains CAS Registry Numbers for easy and accurate substance identification.

=> s 13 L4 191 L3

=> s l4 and py<1993 14766766 PY<1993 L5 0 L4 AND PY<1993

=> s l4 and py<1995 16017204 PY<1995 L6 4 L4 AND PY<1995

=> d abs bib hitstr 1-4 16

L6 ANSWER 1 OF 4 CAPLUS COPYRIGHT 2005 ACS on STN

AB The preparation and binding characteristics of a novel RXR (retinoid X

receptor) selective tritiated radioligand is described. The results indicate that this probe may prove useful for further characterization of the RXR subtype of retinoid receptors.

AN 1995:267735 CAPLUS

DN 122:75576

TI Biochemical characterization of a novel RXR-selective, high specific activity radioligand

AU Mais, Dale E.; Berger, Elaine M.; Zhang, Lin; Boehm, Marcus F.

CS Department of Pharmacology, Ligand Pharmaceuticals, Incorporated, San Diego, CA, 92121, USA

SO Medicinal Chemistry Research (1994), 4(6), 406-13 CODEN: MCREEB; ISSN: 1054-2523

PB Birkhaeuser

DT Journal

LA English

IT 160436-02-2P

RL: SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)

(biochem. characterization of retinoid X receptor-selective, high specific activity radioligand)

RN 160436-02-2 CAPLUS

CN Benzoic acid, 4-[1-(5,6,7,8-tetrahydro-3,5,5,8,8-pentamethyl-2-naphthalenyl)ethenyl]-, labeled with tritium (9CI) (CA INDEX NAME)

L6 ANSWER 2 OF 4 CAPLUS COPYRIGHT 2005 ACS on STN GI

Ι

AB Two series of potent retinoid X receptor (RXR)-selective compds. were designed and synthesized based upon recent observation that (E) -4-[2-(5,5,8,8-tetramethyl-5,6,7,8-tetrahydro-2-naphthalenyl)-1propenyl]benzoic acid binds and transactivates only the retinoic acid receptor (RAR) subtypes whereas its 3-Me derivative binds and transactivates both the RAR and RXR subfamilies. Functional groups in the 3-position of the tetrahydronaphthalenes I [R = H, alkyl, halo, OH, OMe; X = O, CH2] results in compds. which elicit potent and selective activation of the RXR class. Such RXR-selective compds. offer pharmacol. tools for elucidating the biol. role of the individual retinoid receptors with which they interact. Activation profiles in cotransfection and competitive binding assays as well as mol. modeling calcns. demonstrate critical structural determinants that confer selectivity for members of the RXR subfamily. The most potent compound of these series, I [R = Me, X = CH2], is the first RXR-selective retinoid (designated as LGD1069) to enter clin. trials for cancer indications.

AN 1994:656056 CAPLUS

DN 121:256056

TI Synthesis and Structure-Activity Relationships of Novel Retinoid X Receptor-Selective Retinoids

AU Boehm, Marcus F.; Zhang, Lin; Badea, Beth Ann; White, Steven K.; Mais, Dale E.; Berger, Elaine; Suto, Carla M.; Goldman, Mark E.; Heyman, Richard A.

CS Department of Medicinal Chemistry, Ligand Pharmaceuticals Inc., San Diego, CA, 92121, USA

SO Journal of Medicinal Chemistry (1994), 37(18), 2930-41 CODEN: JMCMAR; ISSN: 0022-2623

DT Journal

LA English

IT 153559-48-9P 158499-06-0P 158499-07-1P 158499-08-2P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(preparation and reaction of, in preparation of tetrahydronaphthylethenylbenzoic

acids)

RN 153559-48-9 CAPLUS

CN Benzoic acid, 4-[1-(5,6,7,8-tetrahydro-3,5,5,8,8-pentamethyl-2-naphthalenyl)ethenyl]-, methyl ester (9CI) (CA INDEX NAME)

RN 158499-06-0 CAPLUS

CN Benzoic acid, 4-[1-(3-ethyl-5,6,7,8-tetrahydro-5,5,8,8-tetramethyl-2-naphthalenyl)ethenyl]-, methyl ester (9CI) (CA INDEX NAME)

RN 158499-07-1 CAPLUS

CN Benzoic acid, 4-[1-[5,6,7,8-tetrahydro-5,5,8,8-tetramethyl-3-(1-methylethyl)-2-naphthalenyl]ethenyl]-, methyl ester (9CI) (CA INDEX NAME)

RN 158499-08-2 CAPLUS

CN Benzoic acid, 4-[1-(5,6,7,8-tetrahydro-5,5,8,8-tetramethyl-3-propyl-2-naphthalenyl)ethenyl]-, methyl ester (9CI) (CA INDEX NAME)

IT 153559-49-0P 153559-56-9P 153559-59-2P 158499-03-7P

RL: SPN (Synthetic preparation); PREP (Preparation) (preparation and retinoid receptor binding of)

RN 153559-49-0 CAPLUS

CN Benzoic acid, 4-[1-(5,6,7,8-tetrahydro-3,5,5,8,8-pentamethyl-2-naphthalenyl)ethenyl]- (9CI) (CA INDEX NAME)

RN 153559-56-9 CAPLUS

CN Benzoic acid, 4-[1-[5,6,7,8-tetrahydro-5,5,8,8-tetramethyl-3-(1-methylethyl)-2-naphthalenyl]ethenyl]- (9CI) (CA INDEX NAME)

RN 153559-59-2 CAPLUS

CN Benzoic acid, 4-[1-(3-ethyl-5,6,7,8-tetrahydro-5,5,8,8-tetramethyl-2-naphthalenyl)ethenyl]- (9CI) (CA INDEX NAME)

Me Me 
$$CH_2$$
 $C$ 
 $CO_2H$ 

RN 158499-03-7 CAPLUS

CN Benzoic acid, 4-[1-(5,6,7,8-tetrahydro-5,5,8,8-tetramethyl-3-propyl-2-naphthalenyl)ethenyl]- (9CI) (CA INDEX NAME)

L6 ANSWER 3 OF 4 CAPLUS COPYRIGHT 2005 ACS on STN GI

AB The invention provides a method of screening a substance for the ability to affect the formation of a retinoid X receptor (RXR) homodimer comprising combining the substance and a solution containing RXR receptors and determining the presence of homodimer formation. The screening method can be used to determine compds. which selectively activate homodimer formation and heterodimer formation. Also provided is a method of screening a substance for an effect on a RXR receptor homodimer's ability to bind DNA comprising combining the substance with the homodimer and determining the effect of the compound on the homodimer's ability to bind DNA. Finally, the invention provides methods of activating RXR receptor homodimer formation. Bridged bicyclic aromatic compds. are provided. These compds. are useful for modulating gene expression of retinoic acid receptors, vitamin D receptors and thyroid receptors. Pharmaceutical compns. and methods for modulating gene expression are provided as well. Retinoids were identified that specifically induce RXR homodimer formation and activate RXR homodimers on specific genetic response elements but not RAR/RXR heterodimers. retinoids allow the specific activation of RXR-selective response pathways, while not inducing RAR-dependent response pathways. One of these compds., SR11237 (I), was prepared from Me 4-[(5,6,7,8-tetrahydro-5,5,8,8,-tetramethyl-2-naphthalenyl)carbonyl]benzoate (preparation given).

AN 1994:526151 CAPLUS

DN 121:126151

TI RXR receptor homodimer formation and bridged bicyclic aromatic compounds and their use in modulating gene expression and screening modulating compounds

IN Pfahl, Magnus; Zhang, Xiao Kun; Lehmann, Jurgen M.; Dawson, Marcia I.; Camerion, James F.; Hobbs, Peter D.; Jong, Ling

La Jolla Cancer Research Foundation, USA; SRI International PA

SO PCT Int. Appl., 102 pp.

CODEN: PIXXD2

DT Patent

English LA

FAN.CNT 3

	PATENT NO.					KIND DATE			APPLICATION NO.							DATE				
PΙ	WO 9412880			A2 19940609			WO 1993-US11492						19931124 <							
	WO 9412880				A3 19940929															
		W:	AT,	AU,	BB,	BG,	BR,	BY,	CA,	CH,	CZ,	DE,	DK,	ES,	FI,	GB,	HU,	JP,		
			ΚP,	KR,	KZ,	LK,	LU,	MG,	MN,	MW,	NL,	NO,	NZ,	PL,	PT,	RO,	RU,	SD,		
			SE,	SK,	UA,	VN														
		RW:	ΑT,	BE,	CH,	DE,	DK,	ES,	FR,	GB,	GR,	ΙE,	IT,	LU,	MC,	NL,	PT,	SE,		
								CM,												
	US 5466861		Α		1995	1114	1	US 1992-982305					19921125							

```
US 5552271
                                 19960903
                                              US 1992-982174
                                                                      19921125
     CA 2149882
                           AA
                                 19940609
                                              CA 1993-2149882
                                                                      19931124 <--
     AU 9458693
                           A1
                                 19940622
                                              AU 1994-58693
                                                                      19931124 <--
                           B2
     AU 700706
                                 19990114
     EP 671005
                           A1
                                 19950913
                                              EP 1994-904805
                                                                      19931124
         R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LI, LU, MC, NL
     JP 08506323
                           T2
                                 19960809
                                              JP 1994-513405
                                                                      19931124
     BR 9307528
                           Α
                                 19990831
                                              BR 1993-7528
                                                                      19931124
     US 5837725
                           Α
                                 19981117
                                              US 1995-448991
                                                                      19950524
PRAI US 1992-982174
                           Α
                                 19921125
     US 1992-982305
                           Α
                                 19921125
     US 1992-901719
                           B2
                                 19920616
     WO 1993-US11492
                           W
                                 19931124
os
     CASREACT 121:126151; MARPAT 121:126151
IT
     153559-48-9P
     RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT
     (Reactant or reagent)
        (preparation and reaction of, in preparation of compound affecting retinoid
Х
        receptor homodimer formation)
RN
     153559-48-9 CAPLUS
     Benzoic acid, 4-[1-(5,6,7,8-tetrahydro-3,5,5,8,8-pentamethyl-2-
CN
     naphthalenyl)ethenyl]-, methyl ester (9CI) (CA INDEX NAME)
```

IT 153559-49-0P

RL: PREP (Preparation)
(preparation of, retinoid X receptor homodimer formation and binding to genetic response element in relation to)

RN 153559-49-0 CAPLUS

CN Benzoic acid, 4-[1-(5,6,7,8-tetrahydro-3,5,5,8,8-pentamethyl-2-naphthalenyl)ethenyl]- (9CI) (CA INDEX NAME)

L6 ANSWER 4 OF 4 CAPLUS COPYRIGHT 2005 ACS on STN GI

Ligands which selectively activate retinoid X receptors (RXR) in AB preference to retinoic acid receptors (RAR) are claimed. Claimed per se are several Markush structures, e.g., compds. I [R1, R2 = H, alkyl, acyl; Y = C, O, S, N, CH(OH), CO, SO, SO2, or a salt derivative; R3, R4 = H, alkyl, or is absent; R', R'' = H, alkyl, acyl, OH, alkoxy, thiol, thio ether, amino; or R'R'' = :0, :CH2, :S, :NOH, :NCN, CH2CH2, CH2O, etc.; R5, R6 = H, alkyl, halo, NO2, OH, alkoxy, SH, alkylthio, (di)(alkyl)amino, etc.; X = CO2H or derivs., CHO, tetrazolyl, PO3H2, SO3H, CH2OH, etc.], represented by 43 synthetic examples. Thus, acylation of 1,1,4,4,6-pentamethyl-1,2,3,4-tetrahydronaphthalene by mono-Me terephthalate using PCl5 and then AlCl3, and saponification of the ester product, gave title compound II. In a cotransfection assay, II activated RXR subtypes  $(\alpha, \beta, \gamma)$ with efficacies of 130%, 52%, and 82%, resp. (vs. all-trans-retinoic acid as 100%), but had <2% to <4% efficacy for RAR subtypes. I synergistically increased the activities (e.g., antihyperproliferative) of RAR-active ligands, as well as other hormonal systems (e.g., clofibrate and 1,25-dihydroxyvitamin D activities).

Ι

AN 1994:217004 CAPLUS

DN 120:217004

TI Compounds (naphthalene and indane derivatives) having selectivity for retinoid X receptors

IN Boehm, Marcus F.; Heyman, Richard A.; Zhi, Lin

PA Ligand Pharmaceuticals Inc., USA

SO PCT Int. Appl., 101 pp.

CODEN: PIXXD2

DT Patent

LA English

FAN.CNT 1

	PATENT NO.					KIND DATE				API		DATE						
															<del>-</del>			
PI	WO	9321146			A1	A1 19931028			WO	1993-		19930422 <						
		W: AU, BB, BG,		BG,	BR,	CA,	CZ,	FI,	HU, JE	, KP,	KR,	LK,	MG,	MN,	MW,	NO,		
			ΝZ,	ΡL,	PT,	RO,	RU,	SD,	SK,	UA								
		RW:	ΑT,	BE,	CH,	DE,	DK,	ES,	FR,	GB, GF	R, IE,	IT,	LU,	MC,	NL,	PT,	SE	
	ΑU	U 9341188			A1	1 19931118			AU 1993-41188					19930422 <				
	ΑU	AU 675430				B2 19970206												
	EP 637297				A1 19950208				EP 1993-910835					19930422				
	EP 637297		B1	2	0000	0823												
		R:	AT,	BE,	CH,	DE,	DK,	ES,	FR,	GB, GF	R, IE,	IT,	LI,	LU,	MC,	NL,	PT,	SE
				T2	1	.996	0611	JP	1993-	5187	80		19	9304	122			

```
BR 9306284
                              19980113
                                      BR 1993-6284
                                                               19930422
    RU 2144913
                      C1
                              20000127
                                       RU 1994-46449
                                                               19930422
                                       EP 1999-118827
    EP 983991
                        A2
                              20000308
                                                               19930422
    EP 983991
                        A3
                              20010117
    EP 983991
                        B1
                              20031217
        R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE
    EP 983992
                       A2
                              20000308
                                       EP 1999-118828
                                                               19930422
    EP 983992
                        A3
                              20001129
        R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE
                             20000915 AT 1993-910835 19930422
                       \mathbf{E}
    ES 2149814
                        T3
                              20001116
                                        ES 1993-910835
    PT 637297
                        Т
                              20010131
                                        PT 1993-910835
    AT 256653
                       E
                              20040115
                                       AT 1999-118827
                                                               19930422
                       AA
                              19940721
                                        CA 1993-2153235
    CA 2153235
                                                              19931022 <--
                       C
                              19940721
    CA 2153235
    WO 9415901
                       A1
                             19940721
                                        WO 1993-US10094
                                                               19931022 <--
           AU, BB, BG, BR, CA, CZ, FI, HU, JP, KP, KR, LK, MN, MW, NO, NZ,
            PL, PT, RO, RU, SD, SK, UA
        RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE
    WO 9415902
                       A1 19940721 WO 1993-US10204 19931022 <--
        W: AU, BB, BG, BR, CA, CZ, FI, HU, JP, KP, KR, LK, MN, MW, NO, NZ,
            PL, PT, RO, RU, SD, SK, UA
        RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE
    AU 9455868
                       A1
                            19940815 AU 1994-55868 19931022 <--
    AU 691477
                        B2
                              19980521
    AU 9462258
                              19940815
                                        AU 1994-62258
                                                               19931022 <--
                       A1
    CA 2153236
                       AA
                              19950209
                                         CA 1993-2153236
                                                               19931022
    WO 9504036
                       A1
                              19950209
                                       WO 1993-US10166
                                                              19931022
        W: AU, BB, BG, BR, CA, CZ, FI, HU, JP, KP, KR, LK, MN, MW, NO, NZ,
            PL, PT, RO, RU, SD, SK, UA
        RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE
    AU 9456642
                            19950228 AU 1994-56642
                       A1
                                                               19931022
    EP 678086
                              19951025
                                        EP 1994-901195
                                                               19931022
                        Α1
    EP 678086
                              19991208
                        B1
       R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LI, LU, MC, NL, PT, SE
    EP 678087
                                      EP 1994-902184
                       A1
                             19951025
                                                               19931022
    EP 678087
                              19990317
                       В1
        R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LI, LU, MC, NL, PT, SE
    BR 9307784 A
                                       BR 1993-7784
                             19951114
                                                               19931022
    JP 08505852
                        T2
                              19960625
                                         JP 1993-515962
                                                               19931022
    AT 177733
                                        AT 1994-902184
                       E
                              19990415
                                                               19931022
                                        ES 1994-902184
    ES 2129115
                       Т3
                              19990601
                                                               19931022
                                        AT 1994-901195
    AT 187434
                      E
                              19991215
                                                               19931022
                                        ES 1994-901195
                      Т3
    ES 2139063
                              20000201
                                                               19931022
                      T
                                        PT 1994-901195
    PT 678086
                              20000531
                                                               19931022
                    A
    NO 9403943
                              19941221
                                        NO 1994-3943
                                                              19941018 <--
                      Α
                                        US 1995-485386
    US 5780676
                              19980714
                                                              19950607
                       Α
    US 5962731
                                        US 1995-472784
                              19991005
                                                               19950607
                       Α
    US 6043279
                                        US 1997-799396
                              20000328
                                                               19970212
                       B1
                                        US 1998-115615
    US 6610883
                              20030826
                                                               19980713
                       B1
                                        US 1998-179674
    US 6320074
                              20011120
                                                              19981027
    GR 3032841
                       ТЗ .
                              20000731
                                        GR 2000-400533
                                                              20000303
                                        GR 2000-402529
    GR 3034841
                      Т3
                              20010228
                                                              20001113
                      Α
PRAI US 1992-872707
                              19920422
    US 1992-944783
                       Α
                              19920911
    US 1993-3223
                       Α
                              19930111
                       Α
    US 1993-27747
                             19930305
    US 1993-52051
US 1993-52050
                             19930421
                       Α
                             19930421
                      A3 19930422
    EP 1993-910835
```

```
WO 1993-US3944
                           Α
                                 19930422
     US 1993-141246
                           A1
                                 19931022
     US 1993-141496
                           A1
                                 19931022
     US 1993-141914
                           A1
                                 19931022
     WO 1993-US10094
                           W
                                 19931022
     WO 1993-US10166
                           W
                                 19931022
     WO 1993-US10204
                           W
                                 19931022
     US 1995-479920
                           B1
                                 19950607
     US 1995-485386
                           A1
                                 19950607
os
     MARPAT 120:217004
IT
     153559-48-9P 153559-49-0P 153559-56-9P
     153559-59-2P 153559-65-0P
     RL: SPN (Synthetic preparation); PREP (Preparation)
        (preparation of, as retinoid receptor ligand)
RN
     153559-48-9 CAPLUS
CN
     Benzoic acid, 4-[1-(5,6,7,8-tetrahydro-3,5,5,8,8-pentamethyl-2-
     naphthalenyl)ethenyl]-, methyl ester (9CI) (CA INDEX NAME)
```

RN 153559-49-0 CAPLUS
CN Benzoic acid, 4-[1-(5,6,7,8-tetrahydro-3,5,5,8,8-pentamethyl-2-naphthalenyl)ethenyl]- (9CI) (CA INDEX NAME)

RN 153559-56-9 CAPLUS
CN Benzoic acid, 4-[1-[5,6,7,8-tetrahydro-5,5,8,8-tetramethyl-3-(1-methylethyl)-2-naphthalenyl]ethenyl]- (9CI) (CA INDEX NAME)

RN 153559-59-2 CAPLUS
CN Benzoic acid, 4-[1-(3-ethyl-5,6,7,8-tetrahydro-5,5,8,8-tetramethyl-2-naphthalenyl)ethenyl]- (9CI) (CA INDEX NAME)

RN 153559-65-0 CAPLUS

CN Benzoic acid, 4-[2-methyl-1-(5,6,7,8-tetrahydro-3,5,5,8,8-pentamethyl-2-naphthalenyl)-1-propenyl]- (9CI) (CA INDEX NAME)

=> file stnguide COST IN U.S. DOLLARS SINCE FILE TOTAL ENTRY SESSION FULL ESTIMATED COST 186.43 24.89 DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS) SINCE FILE TOTAL SESSION ENTRY CA SUBSCRIBER PRICE -2.92 -2.92

FILE 'STNGUIDE' ENTERED AT 11:53:47 ON 08 SEP 2005
USE IS SUBJECT TO THE TERMS OF YOUR CUSTOMER AGREEMENT
COPYRIGHT (C) 2005 AMERICAN CHEMICAL SOCIETY, JAPAN SCIENCE
AND TECHNOLOGY CORPORATION, AND FACHINFORMATIONSZENTRUM KARLSRUHE

FILE CONTAINS CURRENT INFORMATION.
LAST RELOADED: Sep 2, 2005 (20050902/UP).

=>

Uploading

THIS COMMAND NOT AVAILABLE IN THE CURRENT FILE Do you want to switch to the Registry File?

Choice (Y/n):

Switching to the Registry File...

Some commands only work in certain files. For example, the EXPAND command can only be used to look at the index in a file which has an index. Enter "HELP COMMANDS" at an arrow prompt (=>) for a list of commands which can be used in this file.

#### => FILE REGISTRY

COST IN U.S. DOLLARS	SINCE FILE	TOTAL
	ENTRY	SESSION
FULL ESTIMATED COST	1.26	187.69

DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)

SINCE FILE ENTRY

TOTAL SESSION

CA SUBSCRIBER PRICE

0.00 -2.92

FILE 'REGISTRY' ENTERED AT 12:06:10 ON 08 SEP 2005 USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT. PLEASE SEE "HELP USAGETERMS" FOR DETAILS. COPYRIGHT (C) 2005 American Chemical Society (ACS)

Property values tagged with IC are from the ZIC/VINITI data file provided by InfoChem.

STRUCTURE FILE UPDATES: 7 SEP 2005 HIGHEST RN 862646-13-7 DICTIONARY FILE UPDATES: 7 SEP 2005 HIGHEST RN 862646-13-7

New CAS Information Use Policies, enter HELP USAGETERMS for details.

TSCA INFORMATION NOW CURRENT THROUGH JULY 14, 2005

Please note that search-term pricing does apply when conducting SmartSELECT searches.

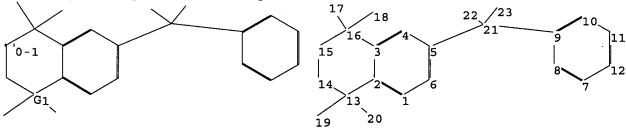
\*

\* The CA roles and document type information have been removed from \* the IDE default display format and the ED field has been added, \* effective March 20, 2005. A new display format, IDERL, is now \* available and contains the CA role and document type information. \*

Structure search iteration limits have been increased. See HELP SLIMITS for details.

Experimental and calculated property data are now available. For more information enter HELP PROP at an arrow prompt in the file or refer to the file summary sheet on the web at: http://www.cas.org/ONLINE/DBSS/registryss.html

Uploading C:\Program Files\Stnexp\Queries\08141496-2.str



chain nodes : 17 18 19 20

ring nodes :

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 ring/chain nodes:

21 22 23

chain bonds :

5-21 9-21 13-19 13-20 16-17 16-18

ring/chain bonds :

21-22 21-23

ring bonds :

1-2 1-6 2-3 2-13 3-4 3-16 4-5 5-6 7-8 7-12 8-9 9-10 10-11 11-12 13-14

14-15 15-16

exact/norm bonds :

2-13 3-16 5-21 9-21 13-14 13-19 13-20 14-15 15-16 16-17 16-18 21-22

21-23

normalized bonds :

1-2 1-6 2-3 3-4 4-5 5-6 7-8 7-12 8-9 9-10 10-11 11-12

isolated ring systems :

containing 1 : 7 :

G1:C,O,S,N

Match level :

1:Atom 2:Atom 3:Atom 4:Atom 5:Atom 6:Atom 7:Atom 8:Atom 9:Atom 10:Atom 11:Atom 12:Atom 13:Atom 14:Atom 15:Atom 16:Atom 17:CLASS 18:CLASS 19:CLASS

20:CLASS 21:CLASS 22:CLASS 23:CLASS

L7 STRUCTURE UPLOADED

=> s 17

SAMPLE SEARCH INITIATED 12:06:26 FILE 'REGISTRY' SAMPLE SCREEN SEARCH COMPLETED - 716 TO ITERATE

716 ITERATIONS 100.0% PROCESSED

SEARCH TIME: 00.00.01

FULL FILE PROJECTIONS: ONLINE \*\*COMPLETE\*\*

BATCH \*\*COMPLETE\*\*

PROJECTED ITERATIONS:

12715 TO 15925

PROJECTED ANSWERS: 6 TO 266

6 SEA SSS SAM L7

=> s 17 ful

FULL SEARCH INITIATED 12:06:30 FILE 'REGISTRY' FULL SCREEN SEARCH COMPLETED - 14058 TO ITERATE

14058 ITERATIONS 100.0% PROCESSED

81 ANSWERS

6 ANSWERS

SEARCH TIME: 00.00.01

81 SEA SSS FUL L7

=> file caplus

COST IN U.S. DOLLARS SINCE FILE TOTAL

ENTRY SESSION

FULL ESTIMATED COST 161.33 349.02

SINCE FILE TOTAL DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)

ENTRY SESSION

CA SUBSCRIBER PRICE 0.00 -2.92

08141496

FILE 'CAPLUS' ENTERED AT 12:06:34 ON 08 SEP 2005 USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT. PLEASE SEE "HELP USAGETERMS" FOR DETAILS. COPYRIGHT (C) 2005 AMERICAN CHEMICAL SOCIETY (ACS)

Copyright of the articles to which records in this database refer is held by the publishers listed in the PUBLISHER (PB) field (available for records published or updated in Chemical Abstracts after December 26, 1996), unless otherwise indicated in the original publications. The CA Lexicon is the copyrighted intellectual property of the American Chemical Society and is provided to assist you in searching databases on STN. Any dissemination, distribution, copying, or storing of this information, without the prior written consent of CAS, is strictly prohibited.

FILE COVERS 1907 - 8 Sep 2005 VOL 143 ISS 11 FILE LAST UPDATED: 7 Sep 2005 (20050907/ED)

New CAS Information Use Policies, enter HELP USAGETERMS for details.

This file contains CAS Registry Numbers for easy and accurate substance identification.

=> s 19 L10 32 L9

=> s l10 and py<1993 14766766 PY<1993

L11 0 L10 AND PY<1993

=> s l10 and py<1995 16017204 PY<1995 L12 2 L10 AND PY<1995

=> d abs bib hitstr 1-2

L12 ANSWER 1 OF 2 CAPLUS COPYRIGHT 2005 ACS on STN GI

AB The invention provides a method of screening a substance for the ability to affect the formation of a retinoid X receptor (RXR) homodimer comprising combining the substance and a solution containing RXR receptors and determining the presence of homodimer formation. The screening method can be used to determine compds. which selectively activate homodimer formation and heterodimer formation. Also provided is a method of screening a substance for an effect on a RXR receptor homodimer's ability to bind DNA comprising

```
combining the substance with the homodimer and determining the effect of the
      compound on the homodimer's ability to bind DNA. Finally, the invention
     provides methods of activating RXR receptor homodimer formation. Bridged
     bicyclic aromatic compds. are provided. These compds. are useful for
     modulating gene expression of retinoic acid receptors, vitamin D receptors
      and thyroid receptors. Pharmaceutical compns. and methods for modulating
     gene expression are provided as well. Retinoids were identified that
     specifically induce RXR homodimer formation and activate RXR homodimers on
     specific genetic response elements but not RAR/RXR heterodimers.
     retinoids allow the specific activation of RXR-selective response
     pathways, while not inducing RAR-dependent response pathways. One of
     these compds., SR11237 (I), was prepared from Me 4-[(5,6,7,8-tetrahydro-
      5,5,8,8,-tetramethyl-2-naphthalenyl)carbonyl]benzoate (preparation given).
AN
     1994:526151 CAPLUS
DN
     121:126151
ΤI
     RXR receptor homodimer formation and bridged bicyclic aromatic compounds
     and their use in modulating gene expression and screening modulating
     compounds
IN
     Pfahl, Magnus; Zhang, Xiao Kun; Lehmann, Jurgen M.; Dawson, Marcia I.;
     Camerion, James F.; Hobbs, Peter D.; Jong, Ling
PA
     La Jolla Cancer Research Foundation, USA; SRI International
     PCT Int. Appl., 102 pp.
SO
     CODEN: PIXXD2
DT
     Patent
     English
LA
FAN.CNT 3
     PATENT NO.
                        KIND
                                DATE
                                            APPLICATION NO.
                                                                   DATE
                         ----
                                -----
                                            ______
                                                                  -----
ΡI
     WO 9412880
                         A2
                                19940609
                                           WO 1993-US11492
                                                                   19931124 <--
     WO 9412880
                         A3
                                19940929
         W: AT, AU, BB, BG, BR, BY, CA, CH, CZ, DE, DK, ES, FI, GB, HU, JP,
             KP, KR, KZ, LK, LU, MG, MN, MW, NL, NO, NZ, PL, PT, RO, RU, SD,
             SE, SK, UA, VN
         RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE,
             BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG
     US 5466861
                          Α
                                19951114
                                         US 1992-982305
                                                                   19921125
     US 5552271
                                           US 1992-982174
                          Α
                                19960903
                                                                   19921125
     CA 2149882
                                19940609
                                            CA 1993-2149882
                          AΑ
                                                                   19931124 <--
     AU 9458693
                                           AU 1994-58693
                                19940622
                          A1
                                                                   19931124 <--
     AU 700706
                          B2
                                19990114
     EP 671005
                          A1
                                19950913
                                           EP 1994-904805
                                                                   19931124
         R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LI, LU, MC, NL
     JP 08506323
                         T2
                                           JP 1994-513405 19931124
                                19960809
     BR 9307528
                                            BR 1993-7528
                          Α
                                19990831
                                                                   19931124
     US 5837725
                                            US 1995-448991
                         Α
                                19981117
                                                                   19950524
PRAI US 1992-982174
                         Α
                                19921125
     US 1992-982305
                          Α
                                19921125
     US 1992-901719
                          B2
                                19920616
     WO 1993-US11492
                          W
                                19931124
· OS
     CASREACT 121:126151; MARPAT 121:126151
IT
     156910-41-7P
     RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT
     (Reactant or reagent)
        (preparation and reaction of, in preparation of compound affecting retinoid
Х
        receptor homodimer formation)
RN
     156910-41-7 CAPLUS
     Benzoic acid, 4-[1-(5,6,7,8-tetrahydro-5,5,8,8-tetramethyl-2-
CN
     naphthalenyl)cyclopropyl]-, methyl ester (9CI) (CA INDEX NAME)
```

IT 156910-31-5P

RL: PREP (Preparation)

(preparation of, retinoid X receptor homodimer formation and binding to genetic response element in relation to)

RN 156910-31-5 CAPLUS

CN Benzoic acid, 4-[1-(5,6,7,8-tetrahydro-5,5,8,8-tetramethyl-2-naphthalenyl)cyclopropyl]- (9CI) (CA INDEX NAME)

L12 ANSWER 2 OF 2 CAPLUS COPYRIGHT 2005 ACS on STN  ${\tt GI}$ 

Ligands which selectively activate retinoid X receptors (RXR) in AB preference to retinoic acid receptors (RAR) are claimed. Claimed per se are several Markush structures, e.g., compds. I [R1, R2 = H, alkyl, acyl; Y = C, O, S, N, CH(OH), CO, SO, SO2, or a salt derivative; R3, R4 = H, alkyl, or is absent; R', R'' = H, alkyl, acyl, OH, alkoxy, thiol, thio ether, amino; or R'R'' = :0, :CH2, :S, :NOH, :NCN, CH2CH2, CH2O, etc.; R5, R6 = H, alkyl, halo, NO2, OH, alkoxy, SH, alkylthio, (di)(alkyl)amino, etc.; X = CO2H or derivs., CHO, tetrazolyl, PO3H2, SO3H, CH2OH, etc.], represented by 43 synthetic examples. Thus, acylation of 1,1,4,4,6-pentamethyl-1,2,3,4-tetrahydronaphthalene by mono-Me terephthalate using PCl5 and then AlC13, and saponification of the ester product, gave title compound II. In a cotransfection assay, II activated RXR subtypes  $(\alpha, \beta, \gamma)$ with efficacies of 130%, 52%, and 82%, resp. (vs. all-trans-retinoic acid as 100%), but had <2% to <4% efficacy for RAR subtypes. I synergistically increased the activities (e.g., antihyperproliferative) of RAR-active ligands, as well as other hormonal systems (e.g., clofibrate and 1,25-dihydroxyvitamin D activities).

Ι

AN 1994:217004 CAPLUS

DN 120:217004

TI Compounds (naphthalene and indane derivatives) having selectivity for retinoid X receptors

IN Boehm, Marcus F.; Heyman, Richard A.; Zhi, Lin

PA Ligand Pharmaceuticals Inc., USA

SO PCT Int. Appl., 101 pp.

CODEN: PIXXD2

DT Patent

LA English

FAN.CNT 1

	PATENT NO.					KIND DATE				APPL	ION 1	DATE							
ΡI	WO 9321146			A1 19931028		WO 1993-US3944						19930422 <							
		W:	AU,	BB,	BG,	BR,	CA,	CZ,	FI,	HU,	JP,	ΚP,	KR,	LK,	MG,	MN,	MW,	NO,	
			ΝZ,	PL,	PT,	RO,	RU,	SD,	SK,	UA									
		RW:	ΑT,	BE,	CH,	DE,	DK,	ES,	FR,	GB,	GR,	ΙE,	ΙT,	LU,	MC,	NL,	PT,	SE	
	AU 9341188			A1	A1 19931118			AU 1993-41188						19930422 <					
	ΑU	6754	30			B2		1997	0206										
	EP 637297			A1	1 19950208			EP 1993-910835						19930422					
	EP 637297			B1		2000	0823												
		R:	ΑT,	BE,	CH,	DE,	DK,	ES,	FR,	GB,	GR,	ΙE,	ΙT,	LI,	LU,	MC,	NL,	PΤ,	SE

```
T2
                               19960611
                                        JP 1993-518708
     JP 08505359
                                                                 19930422
    BR 9306284
                       Α
                               19980113
                                         BR 1993-6284
                                                                 19930422
    RU 2144913
                       C1
                                         RU 1994-46449
                               20000127
                                                                 19930422
                       A2
                                         EP 1999-118827
    EP 983991
                               20000308
                                                                 19930422
    EP 983991
                        A3
                               20010117
    EP 983991
                        B1
                               20031217
        R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE
    EP 983992
                         A2
                               20000308
                                        EP 1999-118828
                                                                 19930422
    EP 983992
                         Α3
                               20001129
        R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE
    AT 195716
                               20000915
                                         AT 1993-910835
                                                                 19930422
                        E
    ES 2149814
                         Т3
                               20001116
                                          ES 1993-910835
    PT 637297
                         Т
                               20010131
                                         PT 1993-910835
                       E
                               20040115
                                         AT 1999-118827
    AT 256653
                                                                 19930422
                        AA
                               19940721
                                          CA 1993-2153235
    CA 2153235
                                                                 19931022 <--
    CA 2153235
                        С
                               19940721
                              19940721
                                         WO 1993-US10094
    WO 9415901
                        A1
                                                                19931022 <--
            AU, BB, BG, BR, CA, CZ, FI, HU, JP, KP, KR, LK, MN, MW, NO, NZ,
            PL, PT, RO, RU, SD, SK, UA
        RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE
                        A1 19940721 WO 1993-US10204
    WO 9415902
                                                               19931022 <--
        W: AU, BB, BG, BR, CA, CZ, FI, HU, JP, KP, KR, LK, MN, MW, NO, NZ,
            PL, PT, RO, RU, SD, SK, UA
        RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE
    AU 9455868
                              19940815
                                         AU 1994-55868
                        A1
                                                                 19931022 <--
    AU 691477
                         B2
                               19980521
    AU 9462258
                               19940815
                                          AU 1994-62258
                        A1
                                                                 19931022 <--
    CA 2153236
                               19950209
                                          CA 1993-2153236
                         AA
                                                                 19931022
    WO 9504036
                        A1
                              19950209
                                         WO 1993-US10166
                                                                 19931022
           AU, BB, BG, BR, CA, CZ, FI, HU, JP, KP, KR, LK, MN, MW, NO, NZ,
            PL, PT, RO, RU, SD, SK, UA
        RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE
                               19950228
                                        AU 1994-56642
    AU 9456642
                         A1
                                                                 19931022
    EP 678086
                                          EP 1994-901195
                         A1
                               19951025
                                                                 19931022
    EP 678086
                              19991208
                        В1
        R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LI, LU, MC, NL, PT, SE
    EP 678087
                                        EP 1994-902184
                        A1
                              19951025
                                                                 19931022
    EP 678087
                               19990317
                         В1
        R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LI, LU, MC, NL, PT, SE
                              19951114
                                        BR 1993-7784 19931022
    BR 9307784
                        Α
    JP 08505852
                        · T2
                               19960625
                                          JP 1993-515962
                                                                 19931022
    AT 177733
                        E
                                          AT 1994-902184
                               19990415
                                                                 19931022
                                          ES 1994-902184
    ES 2129115
                        Т3
                               19990601
                                                                 19931022
                                          AT 1994-901195
    AT 187434
                       E
                               19991215
                                                                 19931022
                       Т3
    ES 2139063
                                          ES 1994-901195
                              20000201
                                                                 19931022
    PT 678086
                       Т
                                          PT 1994-901195
                              20000531
                                                                 19931022
                       A
    NO 9403943
                                          NO 1994-3943
                              19941221
                                                                 19941018 <--
                       Α
    US 5780676
                                          US 1995-485386
                              19980714
                                                                 19950607
                       Α
    US 5962731
                                          US 1995-472784
                              19991005
                                                                 19950607
    US 6043279
                       Α
                                          US 1997-799396
                              20000328
                                                                 19970212
                       B1
                                          US 1998-115615
    US 6610883
                              20030826
                                                                 19980713
    US 6320074
                       B1
                              20011120
                                          US 1998-179674
                                                                 19981027
    GR 3032841
                        Т3
                              20000731
                                          GR 2000-400533
                                                                 20000303
                       Т3
    GR 3034841
                              20010228
                                          GR 2000-402529
                                                                 20001113
                       Α
PRAI US 1992-872707
                              19920422
    US 1992-944783
                       Α
                              19920911
    US 1993-3223
                       Α
                              19930111
                       Α
    US 1993-27747
                              19930305
    US 1993-52051
                       Α
                              19930421
    US 1993-52050
                              19930421
```

```
EP 1993-910835
                          A3
                                 19930422
     WO 1993-US3944
                                 19930422
                          Α
     US 1993-141246
                          A1
                                 19931022
     US 1993-141496
                          A1
                                 19931022
     US 1993-141914
                          A1
                                 19931022
     WO 1993-US10094
                          W
                                 19931022
     WO 1993-US10166
                          W
                                 19931022
     WO 1993-US10204
                          W
                                 19931022
     US 1995-479920
                          В1
                                 19950607
     US 1995-485386
                          A1
                                 19950607
os
     MARPAT 120:217004
IT
     153559-88-7P
     RL: SPN (Synthetic preparation); PREP (Preparation)
        (preparation of, as intermediate for retinoid receptor ligand)
RN
     153559-88-7 CAPLUS
     Benzoic acid, 4-[1-(5,6,7,8-tetrahydro-3,5,5,8,8-pentamethyl-2-
CN
     naphthalenyl)cyclopropyl]-, methyl ester (9CI) (CA INDEX NAME)
```

=> logoff y COST IN U.S. DOLLARS

SINCE FILE TOTAL ENTRY SESSION

FULL ESTIMATED COST 14.56 363.58

DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS) SINCE FILE TOTAL ENTRY SESSION
CA SUBSCRIBER PRICE -1.46 -4.38

STN INTERNATIONAL LOGOFF AT 12:07:31 ON 08 SEP 2005